REMARKS

Reconsideration of the application, as amended, is respectfully requested.

Claims 20-23 have been amended to overcome the Office's rejection based on the form of the claims so that a combined extruder and cooling liquid is recited in the preamble instead of simply an extruder. The typographical error in claim 20 wherein only a screw was recited has also been corrected. It is submitted that the amendment overcomes these informalities.

The invention is directed to the discovery that certain extruders not previously thought to be suitable for frozen products such as ice cream can be used to increase dramatically the performance of an extruder when used in the manufacture of ice cream.

Rauwendaal US Patent No. 4,798,473 is directed to an extruder screw having a variable flight width, helix angle and radical clearance along its length to reduce extruder screw induced power consumption and stock temperature generation in the manufacture of low density polyethylene plastics. During its process along the extruder screw, solid plastic is melted and thoroughly mixed such that all or almost all of the plastic entering the metering section is in a liquid state. Although most of the discussion of substrates concerns plastics, use of the invention is said to be applicable to all fluid extrusions.

Rauwendaal US Patent No. 5,932,159 is directed to a screw extruder said to be well suited generally in any mixing process where a solid or liquid ingredient needs to be mixed dispersively in a viscous fluid. It is said to be particularly well suited for use in mixing blends of polymers or for mixing additives to polymers prior to extrusion forming. It is said also to be possible to mix food products such as dough, mashed potatoes, cooking oil, a slurry of grapes or fruit concentrates, honey or peanut butter.

Zakic US Patent No. 4,541,792 is directed to an extruder system which includes a barrel surrounded by a jacket defining a plurality of zones. A temperature control unit includes a hot water circuit and a cold water circuit which allow connection with each of the zones to receive either hot or cold water. The fluid circulating through each section is preferably water, although it is said that other fluids could be used.

The Office points to no teaching in Zakic of extruders having the features recited herein. Moreover, the Office points to no teaching in either of Rauwendaal's references that his extruders should or could be used for applications wherein cooling is required. Even less does the Office find in the Rauwendaal references a teaching of use of liquid ammonia or other cooling liquids which would be applicable to frozen confections such as ice cream. Taken as a whole, then, the references teach use of another extruder not in accordance with the invention in a situation where a cold fluid may be used (Zakic) and of the Rauwendaal extruders with no mention of use of cold fluids, no less liquid ammonia. Consequently, it is submitted that a case of prima facie obviousness has not been established and it is requested that the Section 103 rejections be withdrawn.

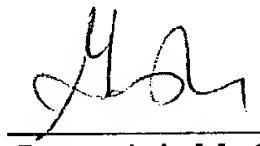
New formal drawings are enclosed, reflecting the correction shown in the previous response.

The Office points to applicants' arguments that the pitch angle can change and raises a question concerning the clarity of the claims. Applicants would like to emphasize that the discussion with respect to the pitch angle changing gave as an example varying pitch length. It such a case, one of ordinary skill could calculate the pitch angle for any pitch length and thereby determine whether there is any infringement.

Claim 7 has been canceled without prejudice in view of the Office's remarks concerning redundancy of subject matter with Claim 20.

In view of the foregoing, it is respectfully requested that the application, as amended, be allowed.

Respectfully submitted,



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